ABSTRACT

A process for making non-thermoplastic starch fibers comprises the steps of: (a) providing a non-thermoplastic starch composition comprising from about 50% to about 75% by weight of modified starch and from about 25% to about 50% of water and having a shear viscosity within the at least one nozzle from about 1 to about 80 Pascals·second at the processing temperature and at a shear rate of 3,000 sec^{-1}; (b) extruding the non-thermoplastic starch composition through at least one extrusion nozzle terminating with a nozzle tip, thereby forming at least one embryonic starch fiber; (c) attenuating the at least one embryonic starch fiber with an attenuating air having an average velocity at the nozzle tip greater than about 30 meters per second, to cause the fiber to form an average equivalent diameter of less than about 20 microns; (d) dewatering the at least one embryonic starch fiber to a consistency of from about 70% to about 99% by weight, thereby producing at least one non-thermoplastic starch fiber, wherein the starch fiber as a whole has no melting point.